

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**IN RE PATENT APPLICATION OF:** Yao

**OUR FILE NO:** 78227CIP1P1510 USCIP

**SERIAL NUMBER:** New Application

**GROUP:** New Application

**FILED:** 12/16/2003

**EXAMINER:** New Application

**TITLE:** DOPED ABSORPTION FOR ENHANCED RESPONSIVITY FOR HIGH SPEED  
PHOTODIODE

**Information Disclosure Statement**

**Mail Stop Non-Fee Amendment**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is an Information Disclosure Statement (Form PTO-1449) in the above-captioned application with references.

**Certification**

X This Information Disclosure Statement is submitted within three months of:

- (i) the filing date of the above-identified U.S. National Patent application, or
- (ii) the date of entry into the U.S. National Stage of the above-identified International Application, or
- (iii) the date of entry into the U.S. National Stage of the International Application that has been assigned the above-identified U.S. Patent application number, whichever applies.

\_\_\_\_\_ This Information Disclosure Statement is submitted prior to the mailing date of the first Office Action on the merits received by Applicant in the above-identified application.

\_\_\_\_\_ This Information Disclosure Statement is submitted after three months from

- (i) the filing date of the above-identified U.S. National Patent application, or
- (ii) after three months from entry into the U.S. National Stage of the above-identified International Application; or
- (iii) the date of entry into the U.S. National Stage of the International Application that has been assigned the above-identified U.S. Patent application number, whichever applies; and after the mailing date of the first Office Action on the merits of the above-identified application, but prior to issuance of the earlier of any Final Action or Notice of Allowance sent in such application. The certification under 37 C.F.R. § 1.97(e) is submitted separately or below, or the fee required under 37 C.F.R. § 1.97(c) and § 1.17(p) is submitted herewith.

\_\_\_\_\_ This Information Disclosure Statement is submitted after the earlier of the mailing date of a final rejection or Notice of Allowance sent in this application but before payment of the Issue Fee. The certification required under 37 C.F.R. § 1.97(e) is submitted separately or below. A petition to the Commissioner and the appropriate fee pursuant to § 1.17(i) (1) are submitted herewith.

\_\_\_\_\_ A certification under 37 C.F.R §1.97 is submitted herewith separately from this paper.

\_\_\_\_\_ It is hereby certified that each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.

\_\_\_\_\_ No item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, after making reasonable inquiry, was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this statement.

Respectfully submitted,



\_\_\_\_\_  
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December 16. 2003

Date: \_\_\_\_\_

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<b>Form PTO 1449</b>  <b>U.S. Department of Commerce</b> <b>Patent and Trademark Office</b>  Information Disclosure Statement by Applicant	<b>ATTY. DOCKET NUMBER:</b> 78227CIP1P1510 US CIP	<b>SERIAL NUMBER:</b> New Application
	<b>APPLICANT:</b> YAO	
	<b>FILING DATE: 12/16/2003</b> NEW APPLICATION	<b>GROUP:</b> NEW APPLICATION

**U.S. Patent Documents**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCL ASS	FILE APP
	A	Ishibashi et al	Oct 6, 1998	5,818,096	257/458		
	B	Lovejoy	Nov 4, 1997	5,684,308	257/184		

**Foreign Patent Documents**

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

**Other Documents (Including Author, Title, Date Pertinent Pages, Etc.)**

	C	Shimizu et al., "InP-InGaAs Uni-Traveling-Carrier Photodiode With Improved 3-dB Bandwidth of Over 150 GHz", IEEE Photonics Technology Letters, Vol. 10, No. 3, March 1998, Pages 412-414.
	D	Kato et al., "Design of Ultrawide-Band, High Sensitivity p-i-n Photodetectors", Journal of Lightwave Technology, Vol. 8, Issue 4, 1990, pp. 531-537.
	E	S.L. Chuang, <i>Physics Of Optoelectronic Devices</i> , Wiley Series in Pure and Applied Optics, John Wiley and Sons, 1995.
	F	Hollenhorst, "Frequency Response Theory for Multilayer Photodiodes", Journal of Lightwave Technology, Vol. 8, No. 4, April 1990, pp. 531-537
	G	S.M. Sze, <i>Semiconductor Devices Physics and Technology</i> , p. 283.
	H	Streetman, <i>Solid State Electronic Devices</i> , Prentice Hall Series in Solid State Physical Electronics, Third Edition, pp. 217-219.
	I	Kato, "Ultrawide-Band/High-Frequency Photodetectors", IEEE Transactions on Microwave Theory and Techniques, Vol. 47, No.7 July 1999, pp 1265-1281.
EXAMINER		DATE CONSIDERED
<b>EXAMINER: Initial if citation is considered, whether or not citation is in conformance with MPEP 609; draw a line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant</b>		